

HOUSE OF LORDS

SESSION 1997–98
6th REPORT

SELECT COMMITTEE ON
SCIENCE AND TECHNOLOGY

**MEETING WITH
EDUCATION MINISTERS**

REPORT WITH EVIDENCE

Ordered to be printed 11th February 1998

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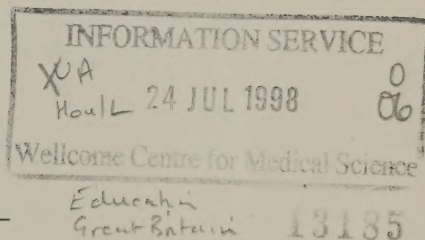


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SIXTH REPORT

11th February 1998

By the Select Committee appointed to consider Science and Technology.

ORDERED TO REPORT

MEETING WITH EDUCATION MINISTERS

On 11th February, we received oral evidence from the Baroness Blackstone, Minister for Education and Employment; Stephen Byers MP, Minister for School Standards; and officials from the Department for Education and Employment. The witnesses answered questions on:

Mathematics, science and information technology in schools;

A-levels;

Increasing access to higher education; and

Recruitment to science and engineering.

The transcript of our exchanges is appended to this Report. It may be read with the transcripts of our recent meetings with Sir Ron Dearing (now Lord Dearing) and with the President of the Board of Trade (1st and 2nd Reports, Session 1997-98, HL Papers 23 and 30).

Written answers to questions about the Research Assessment Exercise, university research infrastructure, and the proposed University for Industry are printed after the transcript.

APPENDIX

Members of the Select Committee

Lord Carmichael of Kelvingrove
Lord Craig of Radley
Lord Dixon-Smith
Lord Flowers
Lord Gregson
Baroness Hogg
Lord Howie of Troon
Lord Jenkin of Roding
Lord Kirkwood
Lord Perry of Walton
Lord Phillips of Ellesmere (Chairman)
Baroness Platt of Writtle
Lord Porter of Luddenham
Lord Soulsby of Swaffham Prior
Lord Tombs
Lord Winston

MINUTES OF EVIDENCE

TAKEN BEFORE THE SELECT COMMITTEE ON SCIENCE AND TECHNOLOGY

WEDNESDAY 11 FEBRUARY 1998

Present:

Craig of Radley, L.
Dixon-Smith, L.
Flowers, L.
Hogg, B.
Howie of Troon, L.
Jenkin of Roding, L.
Perry of Walton, L.

Phillips of Ellesmere, L.
(Chairman)
Platt of Writtle, B.
Porter of Luddenham, L.
Soulsby of Swaffham Prior, L.
Tombs, L.

Examination of Witnesses

BARONESS BLACKSTONE, a Member of the House, Minister of State for Education and Employment, was called in and examined; MR STEPHEN BYERS, a Member of the House of Commons, Minister for School Standards, was examined; and MRS IMOGEN WILDE, Divisional Manager, Higher Education Funding, and MR SANDY ADAMSON, Divisional Manager, Standards Division, Department for Education and Employment, were called in and examined.

Chairman

1. Ministers, thank you very much for coming to see us. I wonder, Baroness Blackstone, whether you would like to introduce your colleagues and make any introductory remarks which you feel would be appropriate before we begin the questions.

(*Baroness Blackstone*) I should begin by introducing Stephen Byers, who is the Minister of State for School Standards, Imogen Wilde, who is responsible for higher education, and Sandy Adamson, who is Head of the Standards Division. I do not think I want to say anything more than that other than that we are delighted to be here and very much look forward to answering your questions.

2. In that case let us begin with the National Numeracy Task Force report. We were very interested to read the preliminary report of this Task Force and look forward to seeing it building on that preliminary report and on the work that has previously been done on this front. But the problems highlighted in recent international comparisons are not just in numeracy and not just in primary schools. What do you see as the way forward in tackling problems outside primary schools and beyond numeracy?

(*Mr Byers*) The National Numeracy Task Force reported a couple of weeks ago now and it was very much an interim report for consultation purposes. That consultation has now begun and will take until May. Then we are looking forward to the final report of the Task Force. The timing of this Committee is very helpful in terms of taking us through the consultation process. I am sure members of the Task Force will be very interested in the views of members of this Committee to help them form their final recommendations. You are absolutely right to say that it will not be enough to concentrate purely on the primary sector, although the Government does take the view that far greater emphasis does need to be placed in the early years of education on developing

skills related to numeracy. That means making numeracy exciting and interesting to young people, which we believe can happen if teachers are trained in the appropriate way. It also means making sure that children do not move on from the primary sector to the secondary sector without having mastered the basics as far as numeracy is concerned. I think there is a particular worry that at the moment a large number of 11-year olds in particular have not reached the required level for children of their age and the latest figures show that something a little over 60 per cent have got to the required level as far as Key Stage 2, Level 4, is concerned. This summer the Government will be launching on a pilot basis some summer numeracy projects to run during the summer holiday period. We did this last summer with literacy which proved to be a great success and we will expand the literacy projects but this summer we will have on a pilot basis about 50 schools involved in numeracy to see how that can operate. In the secondary sector we do need to make sure that the fact that mathematics is a key part of the national curriculum is used to the full and that we make a link between Key Stage 1 at seven, Key Stage 2 at 11, Key Stage 3 and then right through to the end of statutory schooling at 16. If there is a weakness in what we have been looking at so far, we need to concentrate to a far greater extent on making the links and having a coherent approach to the development of skills as far as mathematics is concerned. That is certainly something that we will be concentrating on over the coming months.

3. You have taken us up to age 16 but many people will believe that there is a sort of discontinuity between the GCSE courses at 16 leading into A-levels or what is to come at 16 to 18, and then again perhaps another discontinuity between the A-level courses and university courses. How do you propose handling those?

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BARONESS BLACKSTONE, MR STEPHEN BYERS MP,
MRS IMOGEN WILDE AND MR SANDY ADAMSON

[Continued]

Chairman *contd.*]

(*Mr Byers*) I think it is probably true to say that there is not really a smooth transition at any stage which is satisfactory. I agree that the real areas of difficulty are at the end of perhaps GCSEs, at the end of statutory schooling at 16, and then going on in many cases to A-levels as far as many young people are concerned, and then at 18 on into the higher education sector. Part of the problem is the fact that we do have a range of different examination bodies which award GCSEs operating to different priorities, a different syllabus for each board and so on. That does create difficulties as far as the continuity and coherence that many of us would like to see. I know that Baroness Blackstone, in her area of responsibility, has been looking very carefully at A-levels and we have a consultation paper out at the moment on Qualifying for Success, which is looking specifically at potential reforms in that area. We do need to look very carefully at the number of bodies which can award qualifications in order to ensure that there can be some coherence. We have been particularly interested that one of the difficulties that the national numeracy project (which has been operating in just 13 local education authorities, very much small scale but we can learn a lot from the success that they have had) has identified is the transitional phases, whether it be primary to secondary or from statutory schooling into 16 to 18 education and then from 18 onwards. I have to admit to the Committee that I do not have a simple answer to the problem. I think it is helpful that we have identified this as an issue and we are now carrying out work to see how that transition can be overcome. I have one final comment. Purely by chance we came across a very real problem in relation to the transition between primary and secondary schooling when we did an evaluation of last summer's literacy pilot project which I mentioned earlier. What it revealed was that although a youngster at 11, starting a pilot project, had improved his or her skills at the end of the pilot project, for all 11-year olds there was a dramatic decline in achievement between May of their final year in primary school and September when they started in their secondary school. Over five months therefore there was a decline of over 12 months in their level of achievement, a dramatic drop-off, which does raise the question, what actually happens in primary schools once the 11-year olds have completed their Key Stage 2 assessments? Is there then an effort to continue to push them on to prepare them for the secondary sector of education? I have to say the indications are that that is not the case, and perhaps late May, June and July in the last year of primary school are certainly not being used to full advantage and that is having an effect not just on literacy but on numeracy as well.

Lord Jenkin of Roding

4. I understand that the professional bodies in this area have quite a lot of to offer in terms of people like the Royal Mathematical Society, the Royal Statistical Society, and the Institute of Mathematics. We have also been given to understand that they have been seeking meetings with ministers in order to bring their concerns to your attention but so far time

has not been found for that. I wonder whether that is something that you might be prepared now to look at, if only as part of your consultation on the preliminary report. I know a bit about these bodies and they do have a lot to offer—or do you see them as part of the problem?

(*Mr Byers*) Without having had the opportunity to meet them I could not comment on that. Perhaps when I do take up the invitation and do meet them, which I am more than prepared to do, then I will discover whether they are part of the problem. I am sure they are not. I am sure they can bring a lot to the discussion and I agree that it will be a very useful part of the consultation process that we do that in the short term rather than leave it until after May. I understand that a number of the professional bodies have come together recently in a Joint Mathematics Council which is helpful because it will allow the range of views that does exist to be focused in a better way than has been the case up to now. Certainly the Qualifications and Curriculum Authority, which is the body which advises Ministers on matters relating to the curriculum and its development, does ensure that professional bodies have a role in terms of the subject groups which are created to advise in detail in particular areas. I am sure professional bodies such as those you have mentioned will be involved in that work. Certainly we want to be open and outward looking and I am sure that professional bodies of the kind which have been mentioned will play an important role and will inform the debate, and I am also sure that they will not be part of the problem but will be part of the solution.

Chairman

5. I rather fancy that some people believe that the influence of university mathematicians on the school curricula in the past has perhaps been harmful in that university mathematicians were looking to produce the people that would suit them best in their courses. What influence do you think university mathematicians have and should have in determining the school curriculum?

(*Mr Byers*) Whether they would be part of the problem or not I am not sure. What I do know is that as far as the Numeracy Task Force was concerned we had a very helpful contribution made by two members of the Task Force who are university mathematicians. Margaret Brown, who is Professor of Maths Education at King's College, London, and Chris Robson, Professor of Pure Maths at the University of Leeds, were both members of the Numeracy Task Force and played a very valuable role. I met members of the Task Force on two occasions and I know that those two members in particular were able to have a very wide-ranging look at what the school system should be offering, not in a narrow way which would perhaps suit their own requirements but in a very positive way almost to expose the delights of being able to have control over number and having a mastery of numeracy. I think they played a very positive and practical role in the work of the Task Force. Certainly as far as those two individuals were concerned, they were very helpful and demonstrated a wider concern, a wider

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[Continued]

Chairman *contd.*]

involvement and a wider recognition from those university mathematicians that what schools should be doing is quite distinct from the role that learning in higher education might have. Certainly there has been a valuable role played by a number of leading university mathematicians in developing the curriculum as far as schools are concerned.

Lord Craig of Radley

6. I am interested in your comments about the value of university mathematicians in helping work out the best ways forward with numeracy, but would you agree that improving numeracy goes wider than just being better at mathematics and better at handling numbers and so on, and it is part of an educational process which trains the mind to think and tackle problems in a logical form and therefore the importance of numeracy goes much wider than improving one's mathematics?

(*Mr Byers*) I agree with that. I think there is an interesting discussion about the distinction between numeracy and mathematics and one that we have been tussling with in the department because we keep referring to "a Numeracy Task Force" and then talking about mathematics in schools and it does give rise to a debate about the clear distinction between the two. We are committed to ensuring that in the early years of education in particular numeracy is the issue which is almost coming to terms with concepts to do with number and so children at a fairly early age feel comfortable with different concepts and that is what we (and certainly the Numeracy Task Force with its recommendations) are seeking to do: to devote 45 minutes to an hour every day in primary school which will allow young people to get that sort of mastery, not in mathematics but in numeracy in particular. It is an important point always to bear in mind that there is a distinction that can be made between the two.

Lord Flowers

7. May I make one comment about this? We are still talking of numeracy as if it is something to do with mathematics. It is something to do with mathematics but it is by no means the most important thing. I in my day had students who could do mathematics quite well. But applied to physical problems they would make a silly mistake somewhere or other and would get an answer which was wrong by a factor of a million or more, and did not realise it. They had no concept of size, no concept of numeracy. It was not mathematics; it was the feeling for number that was wrong. That it seems to me is what ordinary people need more than anything else. Ordinary people do not need to do mathematics these days except in an elementary sense. What they do need is a concept of size.

(*Mr Byers*) I would not disagree with that. That is absolutely right. One of the important messages that came through from the Numeracy Task Force was to make that particular point. It is an understanding of numeracy rather than what might be the rather narrow approach to mathematics which is something we need to concentrate on in those early years of

education, which I have to say I think all too often has been neglected in the past, that there has not been a concentration on and the priority that is required has not been given to the teaching of numeracy in an effective way. That is something that we certainly want to tackle.

Baroness Platt of Writtle

8. You want both teachers and children to feel they can play with numbers, numbers are fun, and if you do it this way and you do it that way you get the same answer, which is exciting.

(*Mr Byers*) That is right. As a Minister who unfortunately got his times tables wrong on a radio programme just a couple of weeks ago and who has been doing his hundred lines for the Secretary of State ever since and spending his 45 minutes on his tables, I agree absolutely! It is making playing with numbers fun. What has interested me is when I have been going round to schools to see the way in which good teachers can, almost like playing a game, enthuse individual pupils and children around the use of number and can make it exciting. It certainly did not happen in my day at school but nowadays there are some very good teachers who are making the acquiring of skills and making people comfortable with numbers fun as well, as you say. That is good practice which we want to promote.

Lord Flowers

9. I hope you do not get rid of discontinuities altogether in the teaching of mathematics and science, and anything else for that matter. In my own experience as a schoolboy and a student it was these discontinuities that provided the stimulus to think for myself; the fact that subjects were being presented from a different point of view at a different rate with different demands upon you and no continuity or not much was what made the whole subject interesting and got rid of the boredom of a steady progression through the years with no variation of light or colour. I hope you fail in getting rid of these discontinuities. However, that is just a comment. Does the Department try to foresee what skills in science and mathematics will be required in the early part of the next century? Is there a clear view in the Department of what it is we are aiming for?

(*Mr Byers*) Yes. I am probably going to fail to answer it very well. In this area perhaps above many others it is very difficult to predict with any certainty exactly what will be required at the beginning of the next century. This area of science and information technology is an area where there are rapid changes. One of the lessons that may have been learned over the years is that to predict with great certainty is often a mistake. All we can do is to have almost a route map so we know the direction in which we wish to go, but to be more specific than that may create difficulties. We are going I believe in the right direction, and the development of the National Grid for Learning, concentrating on providing more resources to help teachers train properly in these important areas, are steps in the right direction, but, to be quite frank, I think it would create more

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[Continued]

Lord Flowers *contd.*]

difficulties if we tried to predict with great certainty exactly what the requirements will be in terms of the next century.

10. If we are successful in introducing a much higher level of numeracy and literacy in primary schools, that will presumably affect the balance between subjects that are taught, both in primary schools and later on, because if the students are better prepared then later on presumably they will be able to do certain things at a greater pace, but on the other hand will be able to do other things at a slower pace because there was not time to learn them in primary school.

(*Mr Byers*) Yes. It is a difficult balance to strike. The Government is very much of the view in the primary sector of education that the priorities are to be literacy and numeracy and we are effectively requiring primary schools, as a result of changes that were announced the second week of January by the Secretary of State, to concentrate on literacy and numeracy, probably committing between 40 and 50 per cent of school time on those two areas alone. We think probably about 10 per cent will be spent on science and that is looking at the reports of Ofsted, the independent Inspectorate, to see the commitment that is given in schools to science. That will remain the same, we believe, because although we have changed the curriculum for primary schools we are still requiring primary schools to cover not just mathematics and English but also science and information technology which are still core parts of the curriculum. In addition to that we want there to be a broadly balanced curriculum. We do believe that by concentrating on literacy and numeracy, by using the time more effectively perhaps, and the idea of having a structured 45 to 60 minutes a day on numeracy, that will be the best use of time. The national numeracy project, which I mentioned earlier and which is only applied in 13 local education authorities at the moment, has demonstrated how with an effective use of that time achievement really can be dramatically improved. You are right: what then happens if we can get to the ambitious targets that we set for 11-year olds? It is bound to have an impact on what would happen to the secondary sector because hopefully we will have a lot more young people going on at 11 into secondary school who have an interest in and feel motivated as far as mathematics is concerned. That is bound to have implications both in terms of resources and particularly in terms of the need to have properly qualified teachers in the secondary sector of education. I am sure many members of this Committee will be aware that there is a pressing problem at the moment in terms of recruiting specialist teachers in secondary schools particularly in areas like science, mathematics, information technology, so we could well be creating a problem for the future by our success in the early years of education.

Lord Jenkin of Roding

11. This Committee in the past has been concerned how to get the most benefit out of the new technologies in schools. I wonder if you could give us

an overview of how you feel the technological literacy of the nation has been making progress. This was reported on about 13 or 14 years ago.

(*Mr Byers*) Partly as a result of that report¹, which was in 1984-85, I know that when the previous Government introduced the national curriculum into our schools they were very conscious of the need to provide a place in the national curriculum for information technology. In 1990, I think it was, information technology was introduced as part of the national curriculum subject of technology. Since then it has developed further and there is now a quite discrete area dealing specifically with information technology which applies throughout statutory schooling from five through to 16. It is now a key part of the curriculum that all children are taking as part of their national curriculum. By exposing even the youngest child to the new technologies, we believe we can make them confident, they get experience and expertise as to the use of information technology, and we make them literate. It is exposure, it is feeling comfortable and, by ensuring its place in the national curriculum, from five right through to 16, then I do believe that we will create the literate approach to technology that we clearly do need as a country if we are to ensure that this generation of schoolchildren are to look forward to the next century with confidence. I visited a foundry in Teesside on Monday and it was based on a site which has had a foundry since 1862. What struck me in this foundry was the extent to which new technology was being used. It is a very traditional industry and in many respects it uses the old methods of casting and steelmaking, but it also uses new technology in terms of making sure the right temperatures are achieved and making sure of the strengths of the castings and so. The reality is that in almost every walk of life, whether you are a steelworker or whether you are someone working in a shop, you are going to have to feel comfortable with the new technology. That is why it is very important that we retain throughout someone's school life the opportunity of having access and being able to feel comfortable with IT.

12. Are you aware of the criticism which I have certainly heard that a lot of schools still regard information technology as a separate subject to be taught separately and it plays virtually no role in teaching other subjects, whereas other schools have moved on and can use the IT to enhance the teaching of their other subjects? Is this something that the Government would wish to encourage?

(*Mr Byers*) Yes. There are two issues there. One is that a lot of the present 400,000 serving teachers went through teacher training without themselves being exposed to how they would teach information technology and so we have a real issue which we do need to address, which is that many serving teachers themselves do not have the expertise as far as information technology is concerned. That is why we are particularly pleased that through the National Lottery and the Opportunities Fund £230 million is to be made available specifically for the training of serving teachers to provide them with the skills so

¹ *Education and Training for New Technologies*, 2nd Report 1984-85, HL 48.

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[Continued]

Lord Jenkin of Roding *contd.*]

that they can teach information technology well in the classroom. That will mean making the links and incorporating it within other teaching areas. To help them do that in addition to this funding for in-service training the Qualifications and Curriculum Authority is to produce a scheme of work in primary science which will be ready for this autumn which will show how in the context of primary science information technology can be used and incorporated. That we believe will help individual teachers who may be struggling with making the links. If they can have a well worked out scheme of work they will not need to re-invent the wheel but will be able to gain from best practice. That will be published by the Qualifications and Curriculum Authority this autumn.

13. I watched a German class booking holidays in Germany in German on the Internet and it was staggering to see just how they could make use of that. I thought that was a very exciting example of how it can be used.

(*Mr Byers*) The other benefit that that sort of project has, particularly for secondary school pupils, is that it makes it far more relevant to the world of work.

14. This was a secondary school.

(*Mr Byers*) The Department is very concerned about under-achievement by boys and boys becoming dissatisfied and disaffected quite early on, particularly at 12 or 13 years of age. What is clear is that one of the ways of re-motivating those individuals is by showing how relevant what they are doing in school would be to the world of work and that is a way of re-engaging them in a more applied way perhaps than a rather dry academic approach to information technology.

Lord Craig of Radley

15. I wonder if you could help me with what evidence you have to show whether the use of information technology, as opposed to the teaching of information technology, in other words how it is used in the classroom, has helped with increasing teaching quality and education standards. What evidence have we got at this stage that applying information technology is producing really quantifiable improvements?

(*Mr Byers*) I have to say at this stage there is no direct evidence that it is. It may well be that that comes about because information technology has not been used for enough years in the classroom to be showing a real benefit, but we have looked very carefully at reports from the independent inspectorate to see if there are any indications within those reports both in terms of the annual report from Her Majesty's Chief Inspector and also looking at individual reports concerning individual schools. I have to tell the Committee there is no direct evidence at this stage. We were looking very carefully to see if there was in the light of the question that we knew the Committee was going to be raising this morning. What we have said to both the independent inspectorate, Ofsted, and the Qualifications and Curriculum Authority is that we would like them to monitor this area very carefully to see if there is a

direct link between the use of IT in the classroom and an improvement in standards. I am afraid this is anecdotal, but I go into primary schools and I can see the use of a particular programme called "Success Maker", which is very good at teaching aspects of literacy and using information technology. This is a great success, which explains its name. There are areas like that and over a period of time we may see direct evidence but I have to say to the Committee that as we sit here today I could not bring before you evidence to prove that the use of information technology in the classroom as a tool has had a direct bearing on the raising or the diminishing of standards in the classroom.

16. Which of course has considerable implications for future investment. One inevitably must be able to produce some evidence in order to support bids for future investment. I must say, anecdotally, watching some children of primary school age using IT very enthusiastically, they were probably having a half hour or so on the computer, but you ask them what sort of leading ideas they have been given to use when they are actually hands-on, and that seemed to be lacking at that stage.

(*Mr Byers*) I am not an educationalist but there is an issue I think about whether children just play with the computer or whether they are learning as part of using the computer. I take the view that playing can develop confidence so that you are not terrified by the mouse, which I am. There is a question of building confidence but then you do need to take it a stage further to engage in the learning process. There are questions as to whether or not that is happening enough, particularly in primary schools.

Baroness Platt of Whittle

17. And it could also be relevant at secondary school level. You mentioned the question of teachers who feel comfortable with it. If they do not feel comfortable they are not going to make an interesting lesson, just sitting in front of a machine. Particularly this has been said with girls. Girls like to relate to other people when they are doing things whereas a boy might like to be upstairs in his room, completely isolated. I think it is very important once again to make this very interesting and challenging and to a certain extent class or group wide and that does presuppose the need for the teachers to be comfortable with it in the first place because otherwise they are going to be nervous and you cannot make a lesson exciting then, can you?

(*Mr Byers*) That is right. It is ensuring that teachers themselves are confident in the new technologies which are now available. Your point is very good about teaching methods and classroom practice because all too often we see the use of computers or information technology in the classroom as being one pupil in front of one screen in isolation. I have certainly recently come across teachers who have been able to use information technology in whole class teaching and do it very effectively and using the excitement of the new technologies to engage the whole class in work. I have been very impressed by the way it works well but I have to say that at the moment it is the

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[Continued]

Baroness Platt of Writtle *contd.*]

exceptional teacher who can do that. We do not have a trained workforce of teachers who can harness the benefits of new technology in the exciting way that you have referred to. That is why the need to provide good in-service training to the 400,000 teachers employed at the moment is very important and why we have been able to find this money that has come from the National Lottery; but the money has been found, £230 million, to ensure that good quality in-service training in information technology, and how you can make best use of it, will be provided to those serving teachers.

Baroness Hogg

18. May I start by apologising to the witnesses for the discourtesy of being late to this session. I wanted to pick up, Minister, if I may on the point you made about asking Ofsted to focus on this issue. It strikes me, given the speed at which information technology is spreading through schools, that this may be the last moment at which you could do a particularly easy kind of benchmarking exercise to look at for example success of teaching languages with or without IT systems because you have got enough schools in both camps to match one against the other. Quite soon they will all be using IT more or less effectively (and possibly less effectively) and it will be difficult to see what output you are getting for this particular and now substantial investment into schools.

(*Mr Byers*) That is right. We have got the body of work that has already been carried out by Ofsted in their individual school reports but also in terms of their annual reports where the Chief Inspector does touch on the use of information technology, but not in the concentrated detailed way—

19. Effectively a benchmark exercise.

(*Mr Byers*)—which would be helpful. The Government is about to launch the National Grid for Learning where we will be ensuring that every school is wired up. As part of that I do agree with the point that this perhaps is the final opportunity to do almost a snapshot of where we are at, the levels being achieved, and develop those benchmarks so that we can then judge the performance of schools, the performance of individual year groups, against the benefits or disadvantages that may come about as a result of greater use of information technology. I am someone who believes that we do need to continually evaluate what is going on in our classrooms. There is a great danger that because information technology can be exciting, can be engaging, it is seen to be the solution to everything, whereas for some young people it may be a problem and there may be other things which would engage them in a far more effective way. We do need to be careful. We must ensure that information technology is not the flavour of the month or the flavour of the year but that we do know very clearly why we are using it, what benefits we expect to get from its use, and that we do not then in the process throw out those learning activities which have worked probably for decades in the process. We have to be logical, hardheaded and practical in our approach to the development of IT.

Chairman

20. Are you content with the development of educational material appropriate to the curriculum in our schools?

(*Mr Byers*) I think it is progressing reasonably well. We do have an agency which works on behalf of the Government, the British Educational and Communications Technology Agency—wonderful name; they always seem to have names like that—which has the responsibility for developing programmes of work. Personally I think it can be improved. I am not sure it has been as successful as it might have been and we are taking steps to ensure that as a body it focuses its work in a more relevant way. There are works which it has carried out. It has done material for example on managing information technology in primary schools, on implementation of information technology in primary schools, on music in information technology, which is applied to both primary and secondary schools, and also delivering capability in information technology in secondary schools. Those are materials which have been produced by this agency. I understand that they have been particularly effective and particularly welcomed by individual schools but I do know that there is a view that there should be a central body which can assist schools in taking advantage of information technology. I think we are making progress but a lot more can be done.

Lord Howie of Troon

21. I am concerned about the current narrowness of the A-level system and I recall that Baroness Blackstone published a pamphlet three or four years ago in which she gave some consideration to the International Baccalaureate. I was wondering what the Government are doing about examining the balance between breadth and depth in A-levels and if they were perhaps thinking of nudging them in the general direction of the Baccalaureate.

(*Baroness Blackstone*) Yes. When I was Chairman of the IPPR they published a document which was called "The British Baccalaureate". I was not one of the authors, I was simply Chairman of the IPPR at the time. It was a document that did arouse a great deal of interest. We came into government with a manifesto commitment to look at this broad area and particularly to think about whether we could get greater breadth in the study of 16 to 19-year olds because compared with most other countries we do have a relatively narrow curriculum at that age. We began by producing a consultation document that the Minister has already referred to which is called "Qualifying for Success" and the responses to that consultation are currently being analysed by the Qualifications and Curriculum Authority and we are waiting for their advice as to what has come out of the whole process. We do want to see a somewhat broader curriculum but at the same time we are determined to preserve the rigour and the depth that is associated with A-levels. We believe that the two can go hand in hand. We want a mixture of a rather greater flexibility and some broadening with at the same time the highest possible standards. For example, what we are looking at and one of the things

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we are consulting about is the possibility of all young people doing key skills in this age group and the three main key skills that we are talking about are communication, numeracy (and, picking up what Lord Flowers was saying earlier, that does not mean mathematics, but it does mean an understanding of concepts like size—real, genuine numeracy) and IT, which we of course see as more and more important from the point of view of employability. If people leave school unable to make any use of information technology they are going to find themselves increasingly in some difficulty in vast areas of employment in the United Kingdom economy. We are also looking at an AS type qualification so that in the first year of sixth form studies young people will be able to do the equivalent of half an A-level without a commitment to going on to the whole A-level course and we hope that that will encourage the broadening that so many people have been talking about for a long time. We have not actually consulted on a Baccalaureate. We want to build on the existing system rather than pulling everything up by its roots which will make it very difficult for teachers, who have experienced a great deal of change over the last 10 years in terms of the curriculum. We would like to see a gradual development in the kind of direction that you were mentioning.

22. My Lord Chairman, I suppose if I had read the manifesto I would have known the answer to the question before I asked it, but I do not read that kind of literature on the whole!

(*Baroness Blackstone*) I do not blame you for that!

23. You will not be surprised to know that I never had any A-levels nor felt the lack of them. What I had was the Scottish Higher Leaving Certificate which I know is shallower than the A-levels but broader, and I know that there are difficulties about university level and so on. I wonder to what extent it will be possible to reconcile the A-levels if not with the Baccalaureate then with what we might call the Scottish semi-Baccalaureate.

(*Baroness Blackstone*) I think that might be somewhat easier because the Scottish Higher system does not require quite such a wide range of study as the International Baccalaureate, which is actually used by some secondary schools (a small number) in Britain to very good effect. The important thing is to try to develop a system of study and qualifications for this age group that does enable young people to leave school with a rather broader based understanding and a wider range of subjects behind them than some of them have at present, but at the same time without sacrificing the high standards that we do achieve in this country for many 18-year old school leavers who take A-levels. The other thing that we have been consulting about which perhaps I should mention here is the relationship between the GNVQ and A-levels, the GNVQ being a vocational alternative to A-levels. We think it is very important that the two routes should be rather more closely aligned than they are at the moment without quite such a big gap, with more similar systems of grading and assessment and with the opportunity for young people to do a mix. At the moment it is exceedingly difficult but you might get a young person who wants to do a GNVQ in engineering and who has the ability and the

interest in doing an A-level in mathematics. We would like to make that possible and again that is something on which we are consulting.

Lord Tombs

24. We have of course had AS-levels for about 10 years so it is not a new idea. They have not been very successful. Some universities recognise them, some do not. Some schools do them but there is of course pressure on staff. I wonder if you have examined this issue.

(*Baroness Blackstone*) Yes, we have, and of course you have put your finger on what is the really crucial factor in all of this and that is the attitudes of the universities to qualifications. If universities take a very narrow approach and discount the full range of work that a young person might have done in the sixth form across a wider range of subjects then of course there is a huge disincentive to schools to teach AS-levels. I think there is a shift of opinion in the universities and a growing realisation that there is a lot to be gained from having students arriving with a somewhat broader base as happens in Scotland, and I think that the CVCP has had discussions about this. I am hoping that when we get the final account of the consultation process from the QCA that will emerge and I will be able to have further discussions with the universities about this because it is crucial.

Lord Porter of Luddenham

25. Minister, I was very glad to hear you say that you are looking again at the AS-levels. I think there is a learning process going on in the universities. Would you not agree that probably one of the most important reasons for broadening at an early age is that young people of 16, 15 and even 14 are making a choice about their career without really having experience of alternatives?

(*Baroness Blackstone*) That is absolutely right. If I can be personal and anecdotal for a moment, I remember agonising at the age of 15 and a half when I had to make the choice about A-levels. I did not want to do just three subjects. There were more things I was interested in and I would love to have done a combination of science and arts subjects but it was exceedingly difficult then. It is still too difficult and we have to make progress in this respect.

Lord Soulsby of Swaffham Prior

26. Minister, since the beginning of university expansion there has obviously been a conflict between university access and funding. Initially of course this was addressed by increases in efficiency, but now there is a fear that increased access has caused declining standards as funds are spread even more thinly, and you told the House of Commons Science and Technology Committee on 21 January that the unit of resource per student is to be cut again in 1998-99. Leading from this, does this imply that you are proposing to move more explicitly to mass education along US lines where the first degree may be of relatively little consequence for a professional career, are you prepared to face the consequences of

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more students needing to go into postgraduate degrees with the subsequent costs that are involved?

(*Baroness Blackstone*) There are several different questions in there and perhaps I can try and unpack them. May I begin by saying something about the funding of universities. As I think the Committee will know, the Government did accept the public expenditure programme of our predecessors at least for the first two years. There was a clear commitment by the previous Government to get from the universities much higher efficiency savings of nearly three per cent in 1998-99 and a further four per cent the following year. The Dearing Committee rightly in my view considered that this would have very undesirable effects on quality and standards in higher education and suggested that efficiency savings should be no more than one per cent. The Government has been able to put sufficient additional funding into HE for 1998-99 to ensure that the efficiency savings are less than one per cent, so I think that is a big improvement on what the universities were anticipating and I know from my own experience anticipating with great concern. On the issue of the expansion of higher education there has been of course a very big expansion in recent years which has then been capped. What the new Government would like to see is a more gradual expansion rather than sudden starts and then stops. I think that is easier to manage from the universities' point of view and probably from the Government's point of view makes more sense from the financing perspective. As far as the US system is concerned, which has for a very long time had a mass system of higher education, it is of course an immensely diverse system with huge variety in terms of the type of institution. We are moving towards a more diverse system in the United Kingdom but not as diverse as in the US and I believe that a British undergraduate education leading to a BA or a BSc or a BEd will still lead to very large numbers of people going straight into employment that requires degree level study. I do not see us moving towards a system in which everybody will automatically, if they want a job in any profession, have to go straight into further study at postgraduate level. However, I do believe, and this is part of our commitment to lifelong learning, that more and more people who are graduates will want to come back on a post-experience basis later in their careers to do further study. It may be short courses of a very intense kind or it may be a part-time Master's degree. We have seen a huge growth in part-time study at postgraduate level. That is something that the Government welcomes and wants to see more of. I believe that it is possible for people to combine studying taught Master's degrees with a job by perhaps taking two years rather than a year over their studies and using their evenings and weekends to do so. Of course, I have some direct experience of students who do just that in my previous job as Master of Birkbeck.

27. I am very interested in your comments, Minister. In fact, I think what is happening here will be watched rather closely in North America because the university system there is often described like a doughnut: the outside was the wealth of scholarship and research, and indeed money too, in the

professional schools, but at the centre was the colleges producing the bachelor's degree which was nothing and people used to come out of many universities with no real education at all (except with the very specialist colleges of liberal arts which are very good). In this country it does appear to me, having experienced both, that our BA does prepare people for immediate employment far better than in the United States in the majority of cases?

(*Baroness Blackstone*) I agree with that one hundred per cent and I think it is something we should fight to preserve. We do want to maintain high quality undergraduate education where the standard of the degree will be highly regarded by employers and continue to be highly regarded by employers.

Lord Perry of Walton

28. I feel I must come in at that point because when you were asked whether you were going to move to mass higher education along US lines I felt you ought to be asked whether you were prepared to move along Open University lines. The Open University does produce graduates whose excellence is not questioned by the other parts of the system, it is about half the cost on average and it can expand because it is increasingly cost-effective as the number increases. With new technology huge expansion is all the more possible. Would you not think that is a better way of getting into mass education?

(*Baroness Blackstone*) I think we have to use a number of different routes. As a long standing huge admirer of the Open University I believe this has been one of the great success stories of Britain over the last 30 years or so and long may it survive. At the same time I think that there will always be very substantial numbers of young people, school leavers, who both want and need face to face tuition and want to learn with their peers. I do not think we would be successful if we put all of those young people on to what the Open University does brilliantly for mature part-time students. I think we have to look at expansion and the sustaining of existing full-time more conventional higher education alongside increasing use of distance learning. I think we will see universities outside the OU making more use of distance learning, and some of them are already doing so, particularly for specialised graduate qualifications of one kind or another. I think we will also see them making more use of the Internet. If I can again mention the crystallography department at Birkbeck, which the Chairman knows very well, that has pioneered a course in protein crystallography on the Internet where students from at least 20 countries from around the world are following that course. I am sure we are going to see a great deal more of that kind of thing. What we also need to remember, however, is that the development and start-up costs for distance learning courses, whether using more conventional forms of distance learning or using new forms of IT such as the Internet, are very expensive. We need to do all we can to help the universities with those development costs. We certainly cannot expect people just to move down this road without such help and proper resourcing. I think we need a mix. We

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need to make sure that the expansion of part-time higher education, the second chance opportunities that the Open University and increasingly other conventional universities are offering should go on but I do not think we can simply abandon more conventional provision for young school leavers.

29. I do not quarrel at all with that statement. What I was getting at more was, as you said rightly, the cost of making a course, whether undergraduate or postgraduate, is very high indeed; therefore at the postgraduate level it seems to me to be outrageously expensive to expect many universities to develop distance learning courses of that kind. It would be quicker and easier to do it centrally.

(*Baroness Blackstone*) I think there is something in that. However, I do think that we will see some universities wanting to play a slightly more specialised role in developing expertise in distance learning. I do not think that would in any way undermine the Open University; perhaps a little competition would not be a bad thing as far as the OU is concerned, I think actually they would welcome it. I think that particularly in some forms of postgraduate provision, possibly some subjects that are not currently taught in the OU—it does not cover the whole range—we will see other universities being active and that is, in my view, as it should be.

Lord Tombs

30. Could I return to this question of increased access and limited funding? In spite of your welcome action in reducing the shortfall this year there is in fact quite a serious situation today, increased numbers and decreased funds have put enormous pressure not just on staff-student ratios but on all the things that go to make a university work: lecture space, libraries, laboratories and so on. It is a serious situation. Increased access can no longer be achieved by the use of mirrors, the thing is going to go pop sooner or later. I think unless we can find more money for this sector and improve, not reduce, the use of resource, we will move inevitably towards this question of reducing standards—I hope not as far as the American direction. It just is not possible to squeeze beyond the first five years of economy, which was necessary and painful and it had to be done, but since then the pressure has been on real genuine resources.

(*Baroness Blackstone*) I absolutely accept that if you have a 70 per cent increase in student numbers and you have a 25 per cent cut in the per capita public funding of universities, as we have seen since the late 1980s, you are going to threaten the quality of what they can provide. This is one of the reasons why we are introducing a new system for student support. It is one of the reasons why we have accepted the Dearing recommendations and built on what they recommended in relation to tuition fee charges. We are expecting those families who can afford it to make a contribution—it is only a contribution—towards the cost of higher education. We are doing it, at least in part, because of the financial crisis in which the universities have been left. We are determined to make sure that further and higher education benefit from these changes and that we are

able to provide additional resources as a result of them. We have made a start with £160 million for the universities for next year.

31. There are, of course, competitors for these increased funds in the shape of the universities themselves and the Treasury. It is by no means clear that the amount saved by tuition charges will find its way to the university sector. Is that the case?

(*Baroness Blackstone*) What I can say is we have the agreement from the Treasury that the additional resources that will come in as a result of the changes in the student support system will be used for further and higher education. I do not think we should leave out FE here because it is an enormously important source of students for HE. It does make a very important contribution in relation to the provision of sub-degrees and I think it will in future make quite a big contribution in relation to short vocational courses for graduates. We do want to see the two sectors working very closely together.

32. That is an ongoing commitment from the Treasury?

(*Baroness Blackstone*) That is an ongoing commitment.

Lord Craig of Radley

33. Could I just press you a little further on the figures, Baroness Blackstone? You mentioned the additional sum of money being put in, and of course the £1,000 means tested which I think you said would effectively be hypothecated to higher education?

(*Baroness Blackstone*) I would not like to use the word “hypothecated”, I think that could get me into serious trouble! What I can say is at the moment we have secured agreement that the fees should be collected by the universities, they after all are the ones who charge the fees, and kept by the universities.

34. But will the amount that they raise in that way be taken into account in arriving at further allocations from the extra sum of money which you have mentioned that has been put in? I think this all has to be seen against Dearing's comments that there is something like an additional £350 million needed for higher education in the coming year and over £560 million for the following year, very, very big sums against the sum you have mentioned of £160 million plus whatever comes from the £1,000.

(*Baroness Blackstone*) Yes.

35. There is another issue in all of this as I understand it. Some universities are concerned that the £1,000 will reduce the number of student places and they are very concerned that because they are going to get fewer students than they had anticipated they will find it very much more difficult to meet the overall cost. I wonder whether the Government would be able or would consider helping universities who find themselves in this particular catch 22 situation?

(*Baroness Blackstone*) I hope that a catch 22 situation will never occur. We are confident and optimistic that the universities will be able to fill all of their places next autumn. There was a lot of press speculation before Christmas about serious decline in the number of applications from potential students

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which has turned out to have been quite wrong. On the figures for the position on 15 December, or just after, which was the final date for applicants, although in reality many people can apply later and do, the figures were down by about six per cent. The last figure that I heard which was a January figure, mid-January figure, it was only two per cent. We did have an increase in the numbers of people entering higher education in October which was, as it happened, around six per cent over the numbers that had originally been anticipated. So on that basis it looks as though we were right to be optimistic, that students take their decisions about whether to go into higher education on reasonably rational grounds and it would be quite irrational for them to say that because of the introduction of the tuition fee they are now not going to university. Since it is means tested some 30 per cent will not pay and another 35 per cent approximately, a little under, will only pay part of the £1,000. The new proposals for loans are fairer than the existing ones in that they are income contingent and can be paid back over a much longer period and only when the student's income merits them having to pay back the loan. We are optimistic that the catch 22 you are describing will not in fact happen. I think I said £160 million, it is £165 million that we have been able to put into higher education for 1998-99. It does not match what Dearing said the universities would ideally need. We hope, however, that we can at least stave off some of the problems and that this money will be used both to improve the infrastructure of universities, which I know from my own experience is not in good shape, as well as helping us to broaden access. There are specific sums within the £165 million designated to improve access by doubling access funds and incidentally making them available to part-time students which they have not been before. As the money starts coming in in larger amounts from the new system, and of course it is going to take a little while, then I hope that we will be able to do more for the universities.

36. Just to be quite clear: the £165 million which you have now mentioned and the means tested £1,000 which adds up also to a considerable amount of money for the year, are those two separate sums of money or does the £165 million subsume the £1,000 which students are paying?

(Baroness Blackstone) The amount that would be coming in from fees in 1998-99 I think if I remember rightly is about £130 million. So the universities will in fact be getting rather more than the fee income that will come in in the next academic year.

37. But they are not getting £165 million plus the £130 million, the £130 million is within the £165 million?

(Baroness Blackstone) The £130 million is part of that.

(Mrs Wilde) Could I just come in here and say that as Baroness Blackstone has said, the amount coming in from fees for institutions in England in 1998-99 will be £130 million and within the £165 million which Baroness Blackstone has mentioned, which is the funding for the sector as a whole, £129 million of that will go to institutions, £125 million to enable them to maintain and improve standards and £4

million to institutions to make a very limited start on growth in numbers mainly at sub-degree level.

38. I accept that there must be ways in which the total sum is split up. The point I was trying to make clear for myself was whether the £165 million in total assumed the take from the £1,000 for the student fees, and it does.

(Baroness Blackstone) Yes.

39. It is not new money in other words in that sense?

(Baroness Blackstone) It is actually immensely complicated.

40. Yes.

(Baroness Blackstone) In fact, next year as a result of providing additional loan finance for students we do not in fact secure an increase in the revenue that comes in from the new system but we have ensured that universities will have the equivalent of the additional fee to spend on their own needs.

41. But to go back to my other point about universities which may tend to attract the poorer social economic groups and, therefore, are unlikely to get even £1,000 or a proportion of the £1,000 because those particular students may be excused, that in turn could impact upon those universities. Is there an allowance for that?

(Baroness Blackstone) Yes, there is an allowance. It will not impact on them because through the Local Education Authority Mandatory Award Scheme the sum will be made up. So no university that takes a high proportion of students from low income families would suffer, it would be outrageous if they were to.

Baroness Platt of Writtle

42. Are you concerned about the number of young people coming forward into science and engineering careers? I was pleased to hear you talk about GNVQs and FE and, of course, Ron Dearing himself laid particular emphasis on HNDs, so it is a wide spectrum of young people that you would expect me to say I would like to see going into careers in that field of work.

(Baroness Blackstone) We are concerned that the numbers of young people studying science in the 16-19 age group should be maintained. In actual fact I think the overall proportion is about the same as five years ago. There has been a big increase in the number of students studying biology which has become, I think some people around this table will confirm this, a particularly exciting subject from the point of view of scientific development and I think that has fed into the schools and has become very popular. Chemistry I think has about maintained its position. In physics there has been some drop although I believe that is stabilising at the moment and I hope that will continue to stabilise. We do want to see more young people of high quality with good qualifications applying to do science and engineering courses in higher education and, of course, more of them doing intermediate level qualifications in engineering in our FE colleges. We must not forget about the importance of those kinds of vocational courses if we are going to meet skill needs in a whole

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lot of areas. I would not say that I was particularly worried about the numbers actually going into careers in this particular area of science and engineering, that is a matter for employers providing opportunities. I do not think Government can determine how the economy operates in that respect. This is something that people do not seem to be very aware of but we do actually have a higher proportion of graduates in science and engineering than most other OECD countries, including North America. I do not think there is a problem about numbers coming out. There may be a problem in some areas about quality and that is something that I am very concerned we should enhance.

43. There is a question of quality which is a very important one, as you say, but the Engineering Employers' Federation are very anxious to get high quality graduates in engineering. I think very often both at the 16 year old level and the 18 year old level there is a certain amount of ignorance about the excitement of engineering careers and therefore careers' advisers do not encourage—I would particularly say girls—in the way that they might and they are maybe not aware. I went to a meeting at the other end of the corridor early in the spring when four distinguished surgeons came to say they could do none of their work without the back-up of the engineers: x-rays, ultrasound, incubators for premature babies, etc., yet in schools it is very often sold as inhuman, dirty, poorly paid. It is getting the excitement over again, is it not?

(*Baroness Blackstone*) Yes. I absolutely agree with that and of course I, like you, have a long interest in encouraging girls to look at a wider range of future occupations than used to be the case in the past. Partly as a result of your work we are having some success in this area. We have gone from 25 years ago when only about one per cent of undergraduates studying engineering were women to about 15 per cent now.

44. It is 14 per cent but it has actually plateaued over five years so we cannot be complacent.

(*Baroness Blackstone*) No. We obviously should not be complacent. I was about to say that we should be doing more. What I think is happening is that girls who are very successful in studying science subjects in the sixth form tend to go into things like medicine where we have seen a really dramatic increase in the numbers of women. There are more women medical students than men medical students now. I think that the employers themselves have got to play their part in this. They are the people who really ought to be raising the profile of the profession, providing opportunities for young people to come and see what is going on and how exciting some of the jobs are. They ought to be the people who are bringing teachers in, teachers of older secondary school children and careers service advisers, to pass on to them the kind of excitement that they ought in turn to be conveying to young people.

Baroness Platt of Writtle] A number of people, of course, are doing that but I agree with you. Thank you.

Lord Porter of Luddenham

45. I would like to address this particularly to Baroness Blackstone. Minister, do you see science and engineering degrees as purely vocational, or as a valuable form of education in their own right? Are students of science who do not become professional scientists wasting their time and our money? If that is so, would this be equally true of other specialists, of those reading history for example, who do not become professional historians or those reading PPE who do not become politicians?

(*Baroness Blackstone*) Heaven forbid that everybody reading PPE should become politicians! No, of course I do not think the study of science and engineering at university level is purely vocational. These are very important areas of study in their own right and we should encourage young people to see them as such, and they do. Only 20 per cent of students of pure science end up working as scientists. I think only about 55 per cent of students who read engineering end up as engineers. It is already the case that these subjects play a very important role in providing a basic education at that level for people who have an interest in them. What I think is important, however, is to note that they are very much more expensive to provide for than degrees in history or philosophy or even PPE. I do not think, therefore, we ought to argue that they should be automatically expanded without some consideration to the costs that are involved. I think an engineering degree costs two and a half times as much as a degree in the humanities and a degree in law.

46. Are we perhaps not confusing two things here? We are talking about those who do not go on to become professional scientists and engineers. Do they need such an expensive education? They do not need expensive computers and so forth but in many of their jobs, although not professional, they will get great value from a scientific training. Admittedly those who are going to go on and become professional nuclear physicists or something are going to have an expensive education but, as you have said, they are very small in number: 20 per cent you just said. The other 80 per cent are not so expensive, are they?

(*Baroness Blackstone*) Well, the problem is I do not know how you distinguish in a university between those students who will go on and those who will not. We do not really know that until they get to the end of their courses when they find out whether they have got a first class degree or a third class degree, when they have thought through a bit more deeply whether they want a career in science or not. I think it could be rather invidious to try to distinguish in a sort of sheep and goats way between those who are definitely from day one when they enter a university going to become a very high quality chartered engineer or indeed a nuclear physicist and those who are not. I think that is the difficulty.

47. Baroness Blackstone has expressed the problem that they do not know what they are going to do. Has the Government looked at the possibility of two year, three year, four year courses? People do not know what they want to do when they start and they can take a perfectly respectable pass degree after

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two years, an honours degree after three or a Master's degree after four.

(*Baroness Blackstone*) There is already a range of qualifications taking different lengths of time. HNDs and HNCs are essentially a two year sub-degree. These are of enormous value in their own right. Many people who do them then go into careers especially in engineering but in other fields as well. Some of them may decide to top up their HND, HNC and do a degree in, say, two years. I think it is important that we encourage the continuation of HNDs and HNCs. I do not know that there would be an enormous amount of advantage in calling them a pass degree as against what they are currently called. Incidentally, we have decided that we should encourage the small expansion that will be taking place in higher education at that level at the two year HND, HNC level. As far as three and four year degrees are concerned, I personally think it is important that we do not slip into assuming that only good degrees are done in four years. It is very expensive if we start a sort of automatic shift into four year courses. You are absolutely right, many people can in fact get quite a high level in scientific knowledge and understanding after three years and that should obviously continue. I think we would want to resist a drift into four year science and engineering degrees although we recognise that in

some specialisms they may be desirable for people who are definitely going to go on to become professional scientists or engineers.

48. And of course a very good reason for that is the cost of a four year degree.

(*Baroness Blackstone*) Of course.

49. At least if you have two year degrees as well the cost will not be oppressive.

(*Baroness Blackstone*) There have been discussions in the past about this but the idea of two year degrees has never received a great deal of support from the academic community, I am afraid.

Chairman

50. I am afraid, Ministers, we shall have to leave it at that point because we have run out of time. I am afraid we have not reached the end of the examination paper but, unlike other experiences you may have had, we should be very glad, if you have prepared answers to the questions we have not asked you, if you would let us have them after the meeting.

(*Baroness Blackstone*) We will be very happy to do that but we will miss your supplementaries!

Chairman] Thank you very much.

Supplementary memorandum from the Department for Education and Employment

INTRODUCTION

1. Baroness Blackstone, Minister for Education and Employment, and Mr Stephen Byers MP, Minister for School Standards, gave evidence to the Committee on Wednesday 11 February. In the time allotted, they answered the first seven of the 10 questions asked in advance by the Committee. After the Committee's meeting, the Chairman invited Baroness Blackstone to submit written answers to the remaining three questions. Answers to these questions follow.

Question 8: *Baroness Blackstone told the House of Commons Select Committee that the Government intended to maintain the Dual Support mechanism and the Research Assessment Exercise (RAE) with few changes, and that the Dearing recommendation on scholarship funds for departments opting out of the RAE would not be supported.*

- *It was suggested in the Dearing Report (paragraph 11.22) that the RAE was a blunt instrument for identifying excellence because research was largely done by groups rather than departments, it did not treat interdisciplinary areas fairly and it discouraged collaboration. What would you like to see the Higher Education Funding Councils do about this?*

2. The organisation of researchers varies from subject to subject. Research may typically be carried out by individuals in some disciplines, particularly in the humanities, and by groups in others. The last RAE did not require assessment to be based on departments: it simply required that there should in general be only one submission per institution for each subject-based unit of assessment. This meant that a submission could reflect the work of a group (in some instances where an institution put forward only a proportion of academic staff in a department), a department or even a group of departments. Assessment panels were also able to flag a particular research group in order to draw attention to work which stood out by virtue of higher quality from other research in the same discipline conducted at the same institution.

3. The RAE is intended to inform the distribution of HEFC funding to support the general infrastructure of academic research and to allow institutions to pursue new lines of research and to bring on young researchers. Given that purpose, it would not necessarily be appropriate either to focus assessment or to target funding more closely on particular established research groups: that is the function of the other channel of dual support, the Research Councils.

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4. The research assessment exercises have generally been seen as world leaders in the assessment and promotion of research quality, bringing a more dynamic, competitive research environment and greater accountability. The process is largely accepted, credible and transparent; but we recognise that there are nonetheless concerns about the assessment process, and in particular whether it treats interdisciplinary research fairly and whether it encourages collaborative research sufficiently. We therefore welcome the wide-ranging consultation exercise on research assessment that is currently being carried out by the higher education funding bodies.

5. The consultation paper issued in November 1997 asks 42 questions on the purposes, principles, scope, processes and means of assessing research, including fundamental questions such as whether there are better methods than an RAE for reaching judgements of research quality. It also discusses possible measures for improving the assessment of interdisciplinary research, inviting views on the suggestions made and seeking other ideas. Although no specific questions are asked on research collaboration, it is an open consultation and respondents may comment specifically on this if they feel that the arrangements made for joint submissions in the 1996 exercise failed to give due encouragement to collaborative research. We await with interest the outcome of the consultation, which should be generally available in May.

6. It will be for the higher education funding bodies to consider how best to take into account the views of the academic research community on improvements to research assessment. We are assured that the HEFCE sees interdisciplinary research and facilitation of collaboration as key areas that need to be addressed for any future research assessment exercise. To this end, the Funding Councils have jointly commissioned a study on the assessment and funding of interdisciplinary research.

7. Notwithstanding questions about the assessment of interdisciplinary and collaborative research, it is generally accepted that one of the benefits of the HEFCE's block grant is that it enables institutions to support, at their discretion, interdisciplinary and collaborative research which might otherwise have difficulty in attracting support. In addition, the HEFCE's collaborative research initiative (CollR) provides incentives for researchers in former PCFC institutions to develop their potential through collaboration with stronger research partners. The special funding initiatives run by the HEFCE also all include the promotion of collaboration as a key criterion.

— *You admitted to the House of Commons that a "real issue remains over . . . whether the RAE . . . may encourage some departments to undertake research when they would do better to focus their energies on teaching". If Dearing's per capita scholarship money is not the answer to this problem, what is?*

8. I fully understand the concern that teaching in higher education is too often seen as secondary to research, though this is a problem not just in this country but in the USA and elsewhere. We recognise the need to ensure that teaching has a higher profile and more esteem and are seeking to encourage this through various means. We believe that these will be more effective than a fund for scholarship, particularly when in principle scholarship should be seen as central to teaching and not a funded add-on.

9. First, our letter to the HEFCE giving guidance on grant for 1998–99 has already asked the Funding Council to encourage higher education institutions to give high priority to learning and teaching. I am also pleased to note that the HEFCE's guidelines on institutional bids for more student places seek evidence on the institution's teaching quality. But we recognise that there may need to be a more direct link between institutions' funding and the quality and standards of teaching and learning. We are therefore looking to the funding bodies to identify ways of rewarding the best in teaching and learning. The Secretary of State has asked the HEFCE to consider further ways of linking funding for teaching with assessments of quality.

10. We also see the need to build up the standards and professional status of teachers in higher education. A key to this will be the Institute for Learning and Teaching in Higher Education which was recommended in the Dearing Report and which the higher education sector is already taking forward vigorously. It will be important for the Institute to work closely with the Quality Assessment Agency, the Teacher Training Agency, the General Teaching Council, and the proposed national training organisation for further education. Another way of boosting the quality of teaching is to make the lectures of outstanding teachers more widely available through modern media. The new Institute could help develop this approach.

Question 9: *Dearing identified a need for a revolving fund of £4-500 million for university research infrastructure. Baroness Blackstone told the House of Commons that around £90 million will be available in 1998–99 (HEFCE £53 million, Research Councils/OST £8 million, matching funds from industry etc. £30 million).*

— *How much of this is new money?*

11. It may be helpful to clarify the funding that is being made available for the research infrastructure.

12. In this financial year (ie. 1997–98), the joint research equipment initiative will provide over £60 million of leading-edge research equipment for universities and colleges in England and some £80 million for institutions across the UK as a whole. Of the £80 million, some £34 million comes from public funds (£26 million from the HE funding bodies and £8 million from the Research Councils). This has levered in almost

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£45 million from external sponsors. We have just made available a further £2 million to the HEFCE for the initiative this financial year. This will attract matching funding.

13. Last year (1996-97), the initiative provided some £50 million for institutions across the UK as a whole and some £40 million for research equipment for universities and colleges in England. In other words, in the two years that the HE funding bodies have been running the initiative with the Research Councils and other sponsors of research, it has produced some £100 million for research equipment in England.

14. This is essentially new money for research equipment. The HEFCE has not reduced its formula funding for research during the two years that the initiative has been running: on the contrary, formula allocations for research (including capital funding) rose in cash terms from some £670 million in 1996-97 to £704 million in 1997-98. The joint research equipment initiative has been additional to research formula funding and found from other HEFCE resources.

15. It remains unclear how much funding from external sponsors would have been made available to higher education in the absence of this specific scheme. We believe that the joint research equipment initiative has provided a valuable focus which has encouraged industry and others to sponsor research equipment when they would not otherwise have done so to the same extent. From responses to our consultations on the Dearing Report, it is unclear that industry and other private sponsors would be willing to contribute to a revolving loan fund.

16. It is too early to say how much funding in total will be available next financial year for research equipment. So far, the HEFCE has indicated that it will make £15 million available for the joint research equipment initiative. We have encouraged the Funding Council to build on the joint research equipment initiative and to turn it into an annual exercise. Making it a fixed and annual event should bring forward yet more high-quality bids, bringing with them new sources of funding and further encouraging a strategic approach to research within higher education institutions.

17. The HEFCE has already announced that it will also be providing over £30 million a year for three years from 1998-99 to support a research laboratory refurbishment programme. This will again be met from the Council's funding for special initiatives and not at the expense of its formula funding for research.

— *Accepting that it does cost more to educate science and engineering graduates, what extra support can be expected from the Government to improve the state of teaching and research equipment in higher education institutions?*

18. The HEFCE already makes considerably more grant available for places in science and engineering compared with classroom-based subjects such as the humanities or social sciences. Funding per student will be nearly double in laboratory science and engineering subjects and four and a half times in clinical subjects the level available for classroom-based subjects next year. Similarly, the research funding model gives most weight to predominantly laboratory-based subjects, while part laboratory-based research attracts more funding than library-based research. These higher units of resource allow for extra spending on equipment. Given, however, that the Funding Council pays universities and colleges a single grant for both recurrent and capital purposes, it is for institutions themselves to decide how to allocate these funds.

19. The Secretary of State has told the Funding Council that he continues to attach importance to the supply of places in science and engineering, and has asked the Council to take into account quality considerations in its allocations to individual institutions.

20. As part of our £165 million funding package for higher education next year, we have announced an extra £125 million for universities and colleges in England to maintain and improve quality and standards and to make a start on the backlog of equipment replacement. This should benefit both teaching and research.

Question 10: *Please tell us about your plans for the University for Industry.*

The University for Industry will make a major and unique contribution to the skills and learning revolution needed in this country. It will be a flagship public/private sector partnership which will boost the competitiveness of business, and encourage and enable individuals to gain knowledge and skills to enhance their employability and engagement in society.

It will:

- be a market-maker, stimulating increased demand and radical changes in provision and the information and communication technology (ICT) infrastructure to meet it;
- respond to industry's priority skill needs and employment opportunities, using the most appropriate means of learning delivery;
- assist in developing the learning habit in people and businesses by improving ease of access, quality and affordability;
- offer innovative and cost-effective ways, exploiting the potential of new technologies, for people to learn new skills and gain new abilities at the workplace, in the home or in convenient local learning centres; and

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- extend access progressively to the widest possible range of people, businesses, and locations and of learning opportunities.

HOW WILL IT DO THIS?

The University for Industry will connect people and businesses who want to improve their skills with the people who can offer them the learning they need in the right place at the right time.

Anyone will be able to 'phone free for information. Learning will not be free, but customers will be able to choose how much, how and when they learn. The Internet, television, CD-ROMs and other media will be used to match people's learning needs, and individual circumstances, with available opportunities.

The University for Industry will demonstrate that learning is for everyone. It will commission new learning materials to provide what people need. All materials and the people who supply them will meet quality standards.

The University for Industry will be backed by the government and bring together expertise and experience from the worlds of business and education.

The University for Industry will perform six key functions:

- Marketing and promotion—to stimulate mass demand for lifelong learning using innovative and successful marketing and promotional techniques. The Ufi will brand learning as a valuable and affordable activity accessible by all.
- Information, advice and guidance—to provide high quality and easily accessible information and advice about learning opportunities anywhere in the country, and to provide effective signposting to in-depth local guidance services for those who need further help.
- Brokerage—to provide an efficient and effective means to connect individuals and companies to learning programmes which meet their needs.
- Commissioning—to commission leading-edge learning materials and programmes to fill gaps in provision and respond to consumer demand. The Ufi will thus generate economies of scale in development costs, and encourage and exploit the growth of new markets in technology-based learning products.
- "Kitemarking"—to signify access to national learning networks and to assure users of the quality of services provided, franchised, brokered or commissioned by Ufi.
- Market analysis and strategy—to ensure that the Ufi is guided by up-to-date information, knowledge and expertise.

WHAT PROGRESS HAS BEEN MADE SO FAR?

In the summer of 1997 the Government established an advisory group, chaired by David Brown of Motorola Ltd, to advise on the issues to be considered in designing and developing a University for Industry. Their findings form the basis of the plans outlined in the consultative document on Lifelong Learning. The consultative document gives information on how the University for Industry might work and invites suggestions and comments from interested individuals and organisations.

This will be followed by a more detailed University for Industry prospectus in early spring. Its aim will be to:

- explain what the University for Industry is intended to achieve, how and when it will be established, and how it will operate;
- enable and encourage organisations in the public, private and voluntary sectors to consider how they could contribute to its development and implementation and to offer their comments and expressions of interest; and
- set out themes for medium-term future development work.

Department for Education and Employment

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